

217/782-2113

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT

PERMITTEE

Clark Refining & Marketing, Inc.
Attn: Bill Irwin
201 East Hawthorne
Hartford, Illinois 62048

<u>Application No.:</u> 95030184	<u>I.D. No.:</u> 119050AAA
<u>Applicant's Designation:</u> COOLINGTWR	<u>Date Received:</u> March 13, 1995
<u>Subject:</u> Cooling Water Towers	
<u>Date Issued:</u> September 13, 1995	<u>Expiration Date:</u> September 13, 2000
<u>Location:</u> 201 East Hawthorne Street, Hartford	

Permit is hereby granted to the above-designated Permittee to OPERATE emission source(s) and/or air pollution control equipment consisting of three (3) Cooling Water Towers (Towers #3, #4, and #5) pursuant to the above-referenced application. This Permit is subject to standard conditions attached hereto and the following special condition(s). This permit, including these special conditions, is enforceable under state law pursuant to the Environmental Protection Act and under federal law pursuant to the Clean Air Act.

- 1a. This Federally Enforceable State Operating Permit is issued to address the requirements of 35 Ill. Adm. Code 219.986(d)(3)(C) which requires that inspection and monitoring programs for non-contact cooling water towers be carried out in accordance with conditions in a federally enforceable operating permit.
- b. Prior to issuance, a draft of this permit has undergone a public notice and comment period.
- c. The conditions in this permit supersede all other conditions regarding the three cooling watertowers (#3, #4, and #5) that are in other operating permits for the cooling water towers (72110542 for Tower #3 and 75120010 for Towers #4 and #5).
2. The Permittee shall implement an inspection and monitoring program as follows, to detect leaks of volatile organic material (VOM) into the cooling water system associated with each of the 3 cooling water towers (CWTs) pursuant to 35 Ill. Adm. Code 219.986(d)(3)(C).

a. SAMPLE LOCATIONS

Samples shall be taken of the cooling water supply and return flows for the three CWTs as follows.

COOLING WATER SAMPLE LOCATIONS

<u>Cooling Towers</u>	<u>Unit Location</u>	<u>Sample Points</u>
#3	HF Alkylation	Tower #3= Supply and Return
#4	FCCU	Tower #4= Supply and Return
#5	FCCU	Tower #5= Supply and Return

b. SAMPLE HANDLING

Samples shall be taken in Volatile Organic Analysis (VOA) vials. The vials are to be liquid full and capped such that the sample contains no air space. This method of sampling will minimize any loses of VOM to the atmosphere.

The supply and return samples shall be taken at approximately the same time for each cooling tower. The samples shall be analyzed on the same day they are sampled.

c. PARAMETERS MEASURED

Total Carbon (TC) analysis shall be used as the primary leak detection measurement. The TC of the return flow shall be compared against that of the supply to look for any increases.

The test shall be ran on a TOC analyzer in the TC mode. In this mode, a microportion of the water sample shall be injected into a heated reaction chamber where it is vaporized and all the carbon is oxidized to CO₂. The CO₂ shall be measured by means of an infrared analyzer.

For this method the samples are not filtered, acidified, or sparged prior to the analysis. This minimizes the loss of any light hydrocarbons which may be present.

This analytical method will pick up inorganic carbon as well as organic carbon. However, the concentration of the inorganic carbon will be the same in both the supply and return flows, so any increases in the TC reading shall be attributed to organic carbon.

The residual chlorine level in the towers shall be used as a secondary measure of a hydrocarbon leak in a tower, since most hydrocarbon leaks will lead to a chlorine depletion. This test shall be part of the weekly inspection program performed on all towers. The method of the residual chlorine analysis shall be the Sodium Phosphate Dibasic color wheel/photometric test.

d. MONITORING AND INSPECTION

All three cooling water towers shall be monitored on a monthly basis for an increase in TC in the return line since their circulation rates are less than 25,000 gallons per minute. Additional testing shall be performed in the event a leak is suspected.

In addition, all towers shall be subject to a weekly inspection program. The program shall consists of the following elements:

- i. Chlorine residual test;
- ii. Observed high chlorine or chlorine precursor demand;
- iii. Evidence of foaming;
- iv. Discolored water;
- v. Hydrocarbon odor;
- vi. Visible floating hydrocarbon; and
- vii. Biological growth on the tower wood or screens.

An inspection checklist containing these elements shall be completed weekly for each CWT system. The checklist shall include steps to take if the inspection parameters indicate the presence of a leak.

e. LEAK CRITERIA

A leak shall be detected if a statistically significant increase of 1 ppm in TC concentration at the 95 percent confidence level is observed. This leak criteria shall be consistent with the cooling water tower leak criteria described in the Hazardous Organic National Emission Standard for Hazardous Air Pollutants (NESHAP) for Synthetic Organic Chemical Manufacturing Industry (SOCMI) chemical manufacturing processes at 40 CFR 63.104(b)(v).

If the sampling indicates the presence of a leak, a second set of supply and return line samples shall be analyzed to confirm the presence of the leak as soon as possible. If the presence of a leak is confirmed, efforts to identify and locate the leaking components shall begin.

3. In accordance with 35 Ill. Adm. Code 219.986(d)(4), if a VOM leak in a cooling water system is identified, the Permittee shall initiate and carry out steps to identify the specific leaking component or components as soon as practicable, but in no event later than three days after detection of the leak.
 - a. The Permittee shall repair or remove from service the leaking component, as soon as possible but no later than thirty (30) days after the leak is detected, unless the leaking component cannot be repaired until the next scheduled shutdown for maintenance.
 - b. Upon completion of any repair or removal of a leaking component, the supply and return water samples shall be retested for TC to confirm that the leak has been repaired or eliminated.
- 4a. In accordance with 35 Ill. Adm. Code 219.986(d)(5), the Permittee shall maintain records of the following items, and such other items as may be appropriate to allow the Agency to review compliance with the limits in Condition No. 1.
 - i. Records of inspection and monitoring activity, including date, time and identification of the tower that was sampled;
 - ii. Records of each leak identified in each tower, with date, time, and nature of observation or measured level of parameter;
 - iii. Records of activity to identify leaking components, with date initiated, summary of components inspected with dates and method of inspection and observations;
 - iv. Records of activity to remove a leaking component from service or repair of a leaking component, with date initiated and completed, description of actions taken and the basis for determining the leak in such tower has been eliminated. If the leaking component is not identified, repaired, or eliminated within 30 days of initial identification of a leak in such tower, this report shall include specific reasons why the leak could not be eliminated sooner including all other intervening periods when the process unit was out of service, actions taken to minimize VOM losses prior to elimination of the leak and any actions taken to prevent the recurrence a leak of this type; and
 - v. Records of all non-contact process water cooling towers that are exempt form the requirements of 35 Ill. Adm. Code 219.986(d)(3)(B) and (d)(3)(C).

- b. The records required by this permit shall be retained at a readily accessible location at the plant for at least 3 years from the date of entry and shall be made available for inspection and copying by the Agency and USEPA upon request.
- 5a. In accordance with 35 Ill Adm. Code 219.986(d)(6) the Permittee shall submit an annual report to the Agency which provides the following information:
 - i. The number of leaks identified in each cooling tower;
 - ii. A general description of activity to repair or eliminate leaks which were identified;
 - iii. Identification of each leak which was not repaired in 30 days from the date of identification of a leak in such tower, with description of the leaks, explanation of why the leak was not repaired in 30 days; and
 - iv. Identification of any periods when required inspection and monitoring activities were not carried out.
- b. One copy of the report shall be sent to the following address at the time of the Permittee's submission of their Annual Emission Report:

Illinois Environmental Protection Agency
Bureau of Air
Compliance and Systems Management Section
2200 Churchill Road, P.O. Box 19276
Springfield, Illinois 62794-9276

If you have any questions on this, please call Bradford S. Kohlmeyer at 217/782-2113.

Donald E. Sutton, P.E.
Manager, Permit Section
Division of Air Pollution Control

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cc: IEPA, FOS Region 3
IEPA, FOS - CMU
USEPA
PCF 23